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NEW BOOKS.

The Calculus. By ELLERY W. DAVIS and W. C. BRENKE. New York: The Macmillan Company. Pp. 447. $2.00 net.

The authors of this book have endeavored to make the subject vivid, tangible, and convincing to the student. Rigorous forms of demonstration are not always insisted upon as they would be beyond the grasp of the student. The traditional methods of treating some topics have been replaced by others, such as the proof of the formula for the derivative of a logarithm, and some topics usually given little or no prominence have been brought to the foreground, such as simple harmonic motion, Cavalieri's theorem and others. Practical applications are abundant throughout and a large number of exercises makes a selection possible. It is a carefully written book.

Elementary Textbook on the Calculus. By VIRGIL SNYDER and JOHN IRWIN HUTCHINSON. New York: The American Book Company. Pp. 384. $2.20.

This book is designed particularly for students in engineering and science, for whom a brief but adequate introduction to the calculus is prescribed. In recognition of the demand for a book that shall limit the study to a minimum of time and to the topics that are deemed of most immediate use to the professional course for which the student is preparing, the authors have made a special effort to present the calculus in as simple and direct a form as possible, consistent with accuracy and thoroughness. Every chapter is followed by a generous list of examples, many of which are new and all appropriate to the particular question involved.

Lectures on the Theory of Elliptic Functions. By HARRIS HANCOCK. Vol. I., Analysis. New York: John Wiley and Sons. Pp. 521. $5.00 net.

The plan of this work is to have three volumes as follows: I. Analysis, II. Applications to Problems in Geometry and Mechanics, III. General Arithmetic and Higher Algebra.

In the exposition of Volume I., the *Analysis* of the Elliptic Functions, Professor Hancock has made fundamental a differential equation which he calls the *eliminant equation*. This equation is used to ascertain whether a function in reality has an algebraic addition-theorem and, further, as shown by Hermite, the integrals of this equation are the elliptic functions in the sense defined by Weierstrass. The *problem* of *inversion* is also thereby solved in a remarkably simple manner.

The chapter headings are as follows: Preliminary Notions, Functions which have Algebraic Addition-theorems, The Existence of Periodic

Functions in General, Doubly Periodic Functions, Construction of Doubly Periodic Functions, The Riemann Surface, The Problem of Inversion, Elliptic Integrals in General, The Moduli of Periodicity for Normal Forms of Legendre and Weierstrass, The Jacobi Theta-function, The Functions snu, cnu, dnu, Doubly Periodic Functions of the Second Sort, Elliptic Integrals of the Second Kind, Introduction to Weierstrass's Theory, The Weierstrassian Functions $\wp u$, ζu, σu, The Addition-theorems, The Sigma Functions, The Theta and Sigma Functions when Special Values are given to the Argument, Elliptic Integrals of the Third Kind, Methods of Representing Analytically Doubly Periodic Functions of any Order which have everywhere in the Finite Portion of the Plane the Character of Integral or (Fractional) Rational Functions, The Determination of all Analytic Functions which have Algebraic Addition-theorems.

It is a well-written book for the ground covered.

An Introduction to Algebraic Geometry. By A. CLEMENT-JONES. Oxford: The Clarendon Press. Pp. 548. 12/–.

The main principles observed in the construction of this book as stated by the author are (1) to utilize the previous knowledge of the student; (2) to make the subject self-dependent; (3) to arrange the book work in such logical order that any portion can be readily found; (4) to illustrate difficulties by worked-out problems, each selected with a definite object; (5) to graduate the exercises and to select only those which can be done by the preceding bookwork. These principles have been rather carefully carried out and the book as a whole is such that any student who peruses it with care will have a good knowledge of the subject. It differs from the usual American text on the subject in being more comprehensive and in treating the conics from the standpoint of the general equation of the second degree. Besides rectangular and polar co-ordinates there are chapters on Tangential, Trilinear, and Aerial co-ordinates.

The Theory of Functions of a Real Variable. Vol. II. By JAMES PIERPONT. Boston: Ginn and Company. Pp. 645. $5.00.

This is not a treatise or a manual but a reproduction of the author's university lectures with necessary modifications. A distinctive feature of the work is the author's attempt to develop the theory of functions with reference to a general domain of definition. Other features are his theory of measure, his theory of Lebesgue integrals, and his theory of integrals based upon the notion of the division of any set into mixed partial sets. The book is a credit to both author and publishers.

Syllabus of Mathematics. Ithaca: Secretary of the Society for the Promotion of Engineering Education. Pp. 136. 75 cents.

This is a symposium compiled by the committee on the teaching of mathematics to students of engineering and should be in the hands of